Claims

We claim:

1. A method of delivering of a message content via a wireless network to a user of a wireless terminal device comprising:

receiving a request for delivery of content;

said request including a user, operator or content/service provider specified class of delivery;

scheduling delivery of said content; and

delivering said content to said wireless terminal device via said wireless network.

2. The method of claim 1 wherein said request is received from said user.

3. The method of claim 1 wherein the delivery from the wireless device to the wireless network is scheduled based on communication between the wireless device and a Mobile Content Delivery System.

4. The method of claim 1 wherein said content is received from said content/service provider.

5. The method of claim 1 wherein said class of delivery is selected from the group consisting of immediate delivery and time-delayed delivery.

6. The method of claim 5 wherein said time-delayed delivery is next day or a pre-determined time window.

7. The method of claim 1 wherein said content is delivered as a content delivery message.

8. The method of claim 1 wherein a delivery time is based on said class of delivery, network capacity usage, and content file size.

9. The method of claim 1 further comprising charging for delivery in accordance with said class of delivery.

10. The method of claim 1 wherein said content is comprised of different types of messages, such as: text, pictures, audio, video, and browsing information.

11. The method of claim 10 wherein said content is delivered immediately, or time delayed.

12. The method of claim 10 wherein some parts of said content are delivered immediately, and some parts are time delayed.

13. A mobile content delivery (MCD) system comprising:

provisioning means for maintaining user profiles;

charging means for generating corresponding billing information;

timing means for measuring absolute time remaining to deliver a content delivery message;

queuing means for placing said content in time remaining order;

locating means for identifying a wireless terminal device location;

on-line and statistical analyzing means for evaluating wireless network activity;

traffic analyzing means for intercepting and re-directing traffic;

interfacing means for utilizing different transport mechanisms; and

delivery scheduling means for scheduling delivery of said content based on an evaluation of said wireless network activity in an area in which a wireless terminal device is located.

14. The MCD system as in claim 13 wherein said timing means inserts an absolute time remaining value into the queue logic of the corresponding message.

15. The MCD system as in claim 13 wherein said queuing means places said message content into a queue.

16. The MCD system as in claim 13 wherein said locating means is capable of locating said wireless terminal device current location.

17. The MCD system as in claim 13 wherein said on-line and statistical analyzing means are capable of tracking usage of said wireless network.

18. The MCD system as in claim 13 wherein said delivery scheduling means schedules delivery by determining a cell's usage relative to its capacity, a message content file size, an absolute time remaining to deliver said message, and user location information.

19. A mobile content delivery wireless network comprising of:

a wireless terminal device, a content/service provider, a delivery server, a mobile content delivery system (MCD), and a messaging transport system; wherein the said wireless terminal device interacts with said elements;

said MCD system interacts with said elements;

said delivery system interacts with said MCD system;

said content/service provider interacts with said MCD system; and

said content/service provider interacts with said messaging transport system.

20. The mobile content delivery wireless network as in claim 19 wherein said messaging transport system or MCD system contains or interacts with a Short Message System that delivers a wake-up message to said wireless terminal device.

21. The mobile content delivery wireless network as in claim 19 wherein said messaging transport system or MCD system receives a content delivery message from said content/service provider.

22. The mobile content delivery wireless network as in claim 19 wherein said MCD system schedules delivery of a content delivery message via said messaging transport system.

23. The mobile content delivery wireless network as in claim 19 wherein said MCD system schedules delivery of a content delivery message via some other delivery system.

24. The mobile content delivery wireless network as in claim 19 wherein said MCD system schedules delivery of a content delivery message and delivers said message content itself

25. The mobile content delivery wireless network as in claim 19 wherein said wireless terminal device receives a content from said messaging system, that acts as a delivery server.

26. The mobile content delivery wireless network as in claim 25 wherein said wireless terminal device receives said content from another delivery server selected from a group of servers, one possible delivery server being the MCD system.

27. The mobile content delivery wireless network as in claim 19 wherein said wireless terminal device sends content, and delivery from the wireless terminal towards the network is scheduled based on communication between the wireless device and the MCD system.

28. The mobile content delivery wireless network as in claim 19 wherein said wireless terminal device interacts with said content/service provider through said MCD system, and upon content download the MCD system performs the download on behalf of the user, to the network.

29. The mobile content delivery wireless network as in claim 28 wherein the MCD system interacts with the wireless terminal, informs it about a scheduled delivery being made, and disconnects the session, at the same time downloading the content from the content/service provider to the network.

30. The mobile content delivery wireless network as in claim 29 wherein the MCD system can first deliver a link address of the content to the wireless terminal and delay delivery of the actual content to ensure the most current content is received by the wireless terminal.

31. The mobile content delivery wireless network as in claim 29 wherein the MCD system intercepts the traffic based on content size, which web service is used, or based on a specific time where after all traffic should be intercepted.

32. The mobile content delivery wireless network as in claim 31 wherein the MCD system interception of traffic can be switched "on and off".

33. A wide area network system comprising:

a plurality of wireless terminal devices, a multiple base station system configuration, one or more base station controllers, a cellular network, a content/service provider, a messaging transport system, a short message system, and a mobile content delivery (MCD) system together capable of browsing, ordering, specifying a class of delivery, scheduling, and delivering content to said plurality of wireless terminal devices.

34. The wide area network system as in claim 33 wherein a user browses, orders, and specifies said class of delivery of a content.

35. The wide area network system as in claim 33 wherein the wireless terminal device sends addressing information such as IP address or mobile phone number, default messaging server address, and delivery class to the content/service provider.

36. The wide area network system as in claim 33 wherein the content/service provider system queries the user addressing information such as IP address or mobile phone number, default messaging server address, and delivery class.

37. The wide area network system as in claim 33 wherein said content/service provider is the source of said content.

38. The wide area network system as in claim 33 wherein said wireless terminal device is the source of said content.

39. The wide area network system as in claim 33 wherein said content/service provider forwards said content to said messaging transport system, or another designated delivery server, such as the MCD system.

40. The wide area network system as in claim 33 wherein said MCD system schedules a delivery time window of said content based on said class of delivery, user location, network capacity usage, and content file size

41. The wide area network system as in claim 33 wherein said short message system delivers a wake-up message to said plurality of wireless terminal devices.

42. The wide area network system as in claim 33 wherein a Quality Of Service (QoS) parameter is attached to the short message in order to adjust the speed of the delivery through the network.

43. The wide area network system as in claim 33 wherein the wireless terminal user fetches the content manually based on the information in the short message.

44. The wide area network system as in claim 33 wherein the wireless terminal application fetches the content automatically based on the information in the short message.

45. The wide area network system as in claim 33 wherein said messaging transport system or said designated delivery server delivers said content to said plurality of wireless terminal devices over said cellular network.

46. The wide area network system as in claim 33 wherein the content is delivered through an alternate network (e.g. Internet, ISDN, ADSL, Wireless LAN, Bluetooth, or other networks) based on the operator network architecture, the wireless network load condition, and the preferences set in a user profile.

47. The wide area network system as in claim 46 wherein said content delivered through said alternate network is billed to the user according to said class of delivery.

48. The wide area network system as in claim 33 wherein the MCD system performs traffic analysis and provides a means for intercepting and re-directing traffic based on the data in the traffic streams.

49. The wide area network system as in claim 33 wherein the MCD system performs traffic analysis and provides a means for inserting modified or new data in the traffic streams.

50. A method of ordering and scheduling delivery of content via a wireless network to a user of a wireless terminal device comprising the steps of:

viewing content via said wireless terminal device ;

ordering said content from said wireless terminal device;

accessing a user profile in the network; and

selecting a class of delivery, wherein said class of delivery is a time delayed delivery by which said content is to be delivered to said wireless terminal device via said wireless network.

51. The method of claim 50 wherein said ordering is accomplished via a cellular phone viewing screen.

52. A wireless terminal device capable of viewing, ordering, and specifying a class of delivery of a message content.

53. The method of claim 50 wherein the content is delivered through an alternate network based on the operator network architecture, the wireless network load situation, and the preferences set in the user profile.

54. A method of scheduling delivery of content from a wireless device towards a wireless network comprising the steps of:

accessing a user profile in the network;

selecting a delivery class, or using a pre-defined class specified for the user;

having the wireless device communicate with a MCD system determining an optimized time for delivery of said content based on the delivery class; and

having the wireless device send the content when permitted by the MCD system.

55. The method of claim 54 wherein said delivery is accomplished using a cellular phone.